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ABSTRACT

This paper presents results of a survey of 297 parents in Michigan regarding their knowledge of Fetal Alcohol Syndrome and Fetal Alcohol Effects (FAS/FAE), including their knowledge of the characteristics that typify alcohol-related birth defects and prevention measures. Parents surveyed had children in preschool regular education, preschool special education, kindergarten, grades 1 and 2, and Head Start within four Michigan school districts representing predominantly rural and suburban communities. On the survey questions regarding general facts about FAS/FAE, a majority of the respondents identified the correct answers. Parents were also informed about maternal drinking levels and the time of alcohol consumption that would place the fetus at greatest risk of FAS/FAE. A majority of respondents reported that the national incidence of FAS was higher than current literature estimates. An overwhelming majority agreed that FAS children benefit best from early intervention efforts. Recommendations are offered, focusing on possible actions by school districts and communities. The questionnaire and responses are appended. (Contains 37 references.) (DB)

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PARENT KNOWLEDGE OF FETAL ALCOHOL SYNDROME AND FETAL ALCOHOL EFFECTS: MICHIGAN SURVEY

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PRESENTATION AT THE
MICHIGAN FEDERATED CHAPTERS OF
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ABSTRACT

PARENT KNOWLEDGE OF FETAL ALCOHOL SYNDROME AND FETAL ALCOHOL EFFECTS

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The Centers for Disease Control estimate that each year more than 40,000 babies are born with some type of physical and/or mental birth defects that are the direct result of maternal ingestion of alcohol during pregnancy. Fetal Alchohol Syndrome (FAS) and Fetal Alcohol Effects (FAE) have been identified as major contributors to children who show poor memory, shorter attention spans, lower intelligence, diminished achievement levels and other learning disabilities and behavior problems. This presentation describes the survey results of 297 parents in Michigan with regard to their knowledge of FAS and FAE, characteristics that typify alcohol-related birth defects, and prevention measures.

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PURPOSE

Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE) have been recognized and diagnosed for the past twenty years. It is estimated that 40,000 babies are born with some type of physical and/or mental birth defects that are the direct result of maternal ingestion of alcohol during pregnancy. Coles and Platzman (1992) report that alcohol is a potent teratogen that is associated with a wide range of negative effects in offspring of women who drink during pregnancy. It is estimated that approximately two-thirds of American women of childbearing age drink alcohol and nearly 5 -to- 10 percent of pregnant women drink at levels high enough to place their offspring at risk for the effects of fetal alcohol exposure (National Institute on Drug Abuse, 1988; Weiner, 1984). With the advent of increased illegal drug use among certain high-risk populations, polydrug abuse, including alcohol abuse, may also be increasing (Chasnoff et al., 1990).

Fetal alcohol syndrome (FAS) occurs in 1 -to- 3 infants per 1000 births, making alcohol exposure one of the most frequently identifiable causes of mental retardation (Abel and Sokol, 1987; Burgess & Streissguth, 1990;

Rathburn, 1993). Additionally, another 3 -to- 5 individuals per 1000 births show less severe effects of exposure, which have been termed alcohol-related birth defects (ARBD) of fetal alcohol effects (FAE).

This study concerns parent knowledge of FAS and FAE and the abnormalities resulting from the condition. It describes the survey results of parents in Michigan school districts with regard to their knowledge of FAS and FAE; characteristics that typify alcohol-related birth defects and prevention measures.

LITERATURE REVIEW

In 1973 Jones and Smith introduced the term "Fetal Alcohol Syndrome" to describe a pattern of abnormalities found in children born to alcoholic women. The definitions significant since it clearly delineated a clinically recognizable syndrome that was distinct from all other patterns of congenital malformation, and that was seen exclusively in the offspring of mothers who drank large amounts of alcohol during pregnancy (Aase, 1994; National Institute on Alcohol Abuse and Alcoholism, 1991; Burgess & Streissguth, 1994). An estimated 5,000 infants are born each year with FAS, one in every 750 births, but there is currently no accurate method of determining the actual number of FAS children born. Though it is found in all races and socioeconomic groups that consume alcohol, in the United States, epidemiological data suggest that the rates of FAS tend to be highest in Native Americans, African-Americans, and people of low socioeconomic status (Aase, 1994, Pancrantz, 1993).

TABLE 1

FAS INCIDENCE AND RACIAL GROUP

RACIAL/ETHNIC GROUP	INCIDENCE PER 1000 BIRTHS
• EUROPEAN AMERICAN	29
• AFRICAN AMERICAN	58
• NATIVE AMERICAN	299
• HISPANIC AMERICAN	8
• ASIAN AMERICAN	3

(Chevez et al., 1988; Abel & Sokol, 1991)

TABLE 2

INCIDENCE OF HEAVY DRINKING (AVERAGE OF 2 OR MORE DRINKS PER DAY) DURING PREGNANCY IN THE UNITED STATES

GROUP	% OF HEAVY DRINKERS
• Middle SES	2.8
• Lower SES	9.0

(Marbury et al., 1983; Weiner et. al., 1983, Abel & Sokol, 1991)

TABLE 3

SUMMARY OF ESTIMATED ANNUAL COSTS FOR SPECIAL PROBLEMS RELATED TO FAS

PROBLEM	ESTIMATED COST	% OF TOTAL
Low birth weight	$12,390,340	16.62
Spina bifica	$ 216,489	0.29
Heart defects	$ 1,904,736	2.55
Cleft palate	$ 565,552	0.76
Serious otitis media	$ 1,252,242	1.68
Sensorineural auditory defects	$ 104,640	0.14
Inguinal hernia	$ 172,774	0.23
Hypospadia	$ 296,480	0.40
Mental Impairment	$57,657,248	77.3
TOTAL	$74,561,101	

(Abel & Sokol, 1991)

Even though every pregnancy is different, the smallest amount of alcohol consumed prenatally may cause adverse effects on the fetus. Because of the body's ability to tolerate low doses of most toxic substances, adverse effects may be seen only when exposure exceeds a certain minimum threshold does (the minimum amount of alcohol to produce an effect). Current research suggests that seven standard drinks per week is the threshold level for most

neurobehavioral effects (Jacobson & Jacobson, 1994; Harris et al., 1993). Schenk et al. (1994) report that an estimated 73% of infants are exposed to alcohol before birth, resulting in varying degrees of learning disabilities, developmental delays, and behavior problems that have a lifelong impact on the child's ability to learn and socialize with peers.

The rate of FAS in a population is contingent on the rate of maternal alcohol abuse during pregnancy (Cordero et al., 1994). Maternal alcohol consumption is difficult to measure because of factors: poor memory, guilt, shame, or fear of disclosure on the pregnant women's part. When performing studies on FAS, it is necessary to rely on a woman's self-report on the frequency and the amount of drinking before and after conception, and during the entire pregnancy. However, reports show that when questioned, women with more serious alcohol-related problems were more likely to underreport their alcohol consumption during pregnancy (National Institute on Alcohol Abuse and Alcoholism, 1991).

Exposure to alcohol during the embryonic period (first trimester) of pregnancy can result in a wide range of symptoms, from mild retardation to severe deformities. Physical abnormalities may include facial dysmorphosis, craniofacial abnormalities, and limitations of joint movement. The greater the physical abnormality, the higher the risk of a lower IQ. Recent studies indicate that some children exposed to alcohol prenatally have serious behavior and

learning deficits, even though their IQ's are normal or borderline (Rosenthal, 1990).

Animal research shows that heavy alcohol consumption throughout the entire pregnancy results in a wide variety of effects characteristic of FAS, while episodic binge drinking at high levels results in partial expression of the syndrome, with the abnormalities being unique to the period of exposure (National Institute on Alcohol Abuse and Alcoholism, 1991). It is believed that most damage to the fetus occurs during the first and third trimesters, when the major organs are forming and when the fetus is known to be growing rapidly.

Children who exhibit some, but not all, symptoms of FAS are considered to have Fetal Alcohol Effects (FAE). FAE children exhibit varying degrees of developmental and behavioral problems and central nervous system dysfunction, such as delayed development, hyperactivity, motor incoordination, learning or attention problems, seizures, mental impairment, and language problems. It is estimated that 50,000 babies are born yearly with FAE (Streissguth, 1992).

FAS is difficult to recognize in newborns for three reasons: 1) facial stigmata of FAS are often subtle; 2) some types of central nervous system deficits in infants are difficult to detect; and 3) the birthweight of some affected infants is normal (Morbidity and Mortality Weekly Report, 1993). In addition, many children with FAS and FAE go undiagnosed because of several other factors: the visible abnormalities cannot be substantiated due to family

characteristics, age, or racial background; there are similarities to other disorders, or there is the presence of nonspecific abnormalities. When diagnosing children for FAS or FAE, one must consider the normal variation of features in the child's racial group or family; for instance, the broader lip normally seen in children of African-American parentage may cancel out the narrowing of the upper lip border in children with FAS. In many Native American groups, it is normal to have a moderate degree of midfacial hypoplasia. Also, height growth, level of IQ, and inherited body characteristics may obscure or mimic signs of FAS. Children with FAS and FAE may also share common symptoms with other birth defects (Aase, 1994).

There is no simple, objective test for diagnosing FAS. The actual syndrome must be medically diagnosed, although some health practitioners have questioned the utility of diagnosing alcohol-related birth defects because there is no known cure (Russell, 1994). Still three major symptoms are used in its diagnosis.

The first characteristic is a growth deficiency that is present prenatally and continues into childhood. Osborn et al. (1993) note that children with FAS usually fall below the second percentile in height, weight, and head circumference compared to their peers.

With regard to the second set of diagnostic characteristics, children with FAS demonstrate behavioral and cognitive impairments. This may include such

behaviors as hyperactivity, motor problems, attention deficits, cognitive disabilities, and poor eating and sleeping patterns. Aase (1994) notes that intellectual performance and behavior are dependent on the age of the child at the time of diagnosis, and learning and behavior problems evolve throughout childhood and adolescence, involving more than a simple retardation factor.

In reference to the third set of diagnostic characteristic, children with FAS will evidence distinct patterns of facial anomalies and other physical abnormalities. The unique pattern of facial anomalies include short palperbral fissures (small eyes relative to the space between the eyes), flat midface, long and/or smooth filtrum, short nose, epicranthal folds, thin upper lip, low nasal bridge, minor ear anomalies, a small chin, low set ears, ptosis (drooping of the upper eyelids), and strabismus (a disorder of the eye in which the optic axes cannot be directed at the same object) (Aase, 1994; Randels & Streissguth, 1992). As facial dysmorphia occurs during the embryonic period which is the first eight weeks of the first trimester, craniofacial anomalies in human subjects are probably associated with drinking during the initial stage of pregnancy (Colles, 1994;) Osborn et. al. (1993) report that malformations of the heart occur in 29% -to- 49% of infants affected with FAS. Also, almost half of these children have genital and renal malformations. Other anomalies may include congenital hip dislocation, club feet, scoliosis, ligamentous laxity, flexion contractures of the elbow and polydactaly (a condition of having more than the normal number of fingers and toes).

Children with FAS are also at increased risk of sudden infant death syndrome because of respiratory complications associated with upper airway obstruction caused by physical anomalies (Osborn et al, 1993). Central nervous system dysfunction is also included in the physical abnormalities. Burgess and Streissguth (1992) include microcephaly, alteration in reflex behavior, motor impairments, attention deficits, cognitive disabilities and hyperactivity. Osborn et. al. (1993) report that defects such as anencephaly (a congenital absence of the brain and spinal cord) occur more frequently in children with FAS. They also report that microcephaly occurs in greater than 80 percent of infants affected with FAS, and it becomes more evident as the child matures.

With regard to FAS, the syndrome's diagnosis depends on the ability of the physician to recognize the consistent pattern of minor, often subtle physical abnormalities. Some of these physical characteristics change with time, and their degree of severity may vary among individuals. Confirming the diagnosis of FAS in special patients is often difficult, even for physicians with considerable experience with FAS (Aase, 1994). Burgess and Streissguth (1990) recommend that FAS or FAE should be diagnosed by a developmental pediatrician or dysmorphologist (a physician specializing in birth defects), and propose that there must be strong evidence of maternal drinking before the physician can make a positive diagnosis.

According to Weiner and Morse (1994), children with FAS are each unique, exhibiting some but not all of its characteristics; they are alike however,

in that they all show learning difficulties and behavior problems. FAS continues to be the leading and only preventable cause of mental retardation in the western world.

FAS and FAE students can be found in all types of educational programs posing a challenge to today's educators. Experts believe that from one-third to two-thirds of all children in special education have been affected by alcohol (Burgess & Streissguth, 1992). Early intervention is one of the most critical services that educators can provide for FAS and FAE students to maximize the effectiveness of educational programs (Burgess & Streissguth, 1992; Olsen, 1994). Providing an early childhood curriculum that fits the needs of these children calls for diverse methods and materials.

Education of youngsters with FAS and FAE may be considered as both an art and a science. Most state educational systems do not recognize FAS or FAE as distinct handicapping conditions or as a separate funding category (Burgess & Streissguth, 1990). Lack of supporting specific educational programs for children with FAS and FAE make it necessary for educators to rely on information and educational practices used with children with other developmental disabilities (Burgess, 1994). Children with FAS and FAE may be inappropriately placed within the school system if their condition has not been properly diagnosed, or if there is a misunderstanding of FAS by the school system (Weiner & Morse, 1994).

In trying to design appropriate programs for FAS and FAE students, this author has found the following to be effective teaching practices:

1. early intervention
2. developing reasonable expectations for students
3. teaching functional skills
4. teaching social skills
5. individualized programs
6. using behavior management strategies that promote independence
7. using collaborative efforts with the home
8. dissemination of information focused on prevention

FAS and FAE are lifelong disorders with an estimated lifetime cost of $1.4 million per individual, for educational, medical, and living needs and care (Bloss, 1994). The growing number of FAS and FAE birth creates an impact on society in economic, educational, and medical areas. Community resources such as state and local agencies, hospitals, advocacy groups, and legal services, as well as the educational system, need to provide services to parents, to help them learn to deal with the behaviors and needs of their FAS and FAE children.

Prevention of FAS and FAE is a national health priority included in the Health People 2000 objectives for health promotion and disease prevention (Cordero et al., 1994). Educating and providing resources for better

understanding of the cause of FAS and FAE and their prevention is necessary. FAS and FAE are not curable but the are preventable if women would follow the recommendation to abstain from drinking throughout pregnancy.

SURVEY GROUP

The survey group was limited to parents of children in the following categories: preschool regular education, preschool special education, kindergarten, grades 1 and 2, and Head Start. The sample (n=297) was selected from the following Michigan school districts: Berrien County Intermediate, Hart Public, Grand Rapids. and Muskegon Public. Survey forms were distributed to 360 individuals and 297 were returned with a response-rate of 83%. Graduate students worked in collaboration with this professor in the distribution and collection of data responses. Representation of the respondents by self-selection of community type included: 48% rural, 31% suburban, and 21% urban. Thirty-four percent of the respondents were male and 66 % were female. Educational levels of the survey group included: 64% less than a baccalaureate degree, 23% baccalaureate degree, 9% masters degree, 3% specialist degree, and 1% doctoral degree. Their response to racial/ethnic group identification included: 2% Asian American, 13% African American, 57% European American, 4% Hispanic, 11% Native American, and 13% Other.

SPECIAL RECOGNITION IS EXTENDED TO THE FOLLOWING GRADUATE STUDENTS WHO ASSISTED THIS AUTHOR BY CONDUCTING MICRO-STUDIES ON THE TOPIC: Marilyn Montgomery, Carmen Reynolds, Liz Reynolds, Kimberly Lynne Springer, Denise M. Struble, Suzanne Beauchamp

SURVEY INSTRUMENT

A four-page back-to-back questionnaire was developed having 31 questions regarding awareness of FAS and FAE. The survey was composed of Likert-type items which were recorded on a computer scoring form using a question-design procedure recommended by Mack (1994). Parents were informed that the survey was not a test, and that they should mark those responses which represented a true reflection of their opinion. Each survey was given a confidential code which provided the opportunity of confirming submission of surveys and delivery of follow-up requests.

INSERT APPENDIX #1

DATA COLLECTION

Using a cover letter, parents were informed that the instrument would take approximately 15 minutes to complete, and all responses would be considered confidential. They were also given a stamped envelope in which to return the questionnaire. Follow-up letters and return envelopes were provided to individuals who had not responded by the 10th day of the initial submission.

DATA ANALYSIS

Data was tabulated using descriptive statistical procedures and the Crosstabs program of SPSS for Windows. Data scanning resources were provided by Grand Valley State University.

FINDINGS

This study was concerned with parent knowledge of FAS and FAE, characteristics that typify alcohol related birth defects, and prevention measurers which may be shared with parents in counseling sessions. When gathering information on a child's developmental history, 94% indicated the interview form included a question on prenatal history , and 88% responded that the form included questions on the parent's alcohol consumption. In terms of the ability to identify a child with FAS, the respondents provided 53% reported that they lacked the qualifications.

In estimating the prevalence of FAS, parents reported the following rates: one in 500 births (34%), one in 100 births (33%), one in 800 births (16%), and one in 1,000 births (13%). The majority of the parents identified the prevalence of FAS to be the same in all races (42%) followed by Native Americans (23%), African Americans (18%), Hispanic Americans (7%), European Americans (6%), and Asian Americans (4%). In terms of the prevalence of FAS across the various socioeconomic-economic groups in the US, responses were presented in the following rank-order: most prevalent in lower economic groups (53%), most prevalent in all economic groups (39%), most prevalent in middle economic groups (7%), and most prevalent in upper economic groups (1%).

With regard to which period of fetal development places the fetus at greatest risk for a pregnant woman to consume alcohol: 84% noted that the first trimester, 11% the second trimester, and 6% the third trimester. The highest response for the minimum level of alcohol consumption that would place the fetus in danger of FAS was 1-2 drinks once or twice a week (38%), 1-2 drinks daily (38%), 3-4 drinks within a week (16%), and 3-4 drinks daily (8%).

When requested to present their agreement with various statements regarding the characteristics of FAS and FAE, respondents strongly agreed or agreed to the following statements:

1. FAS children are identifiable (70%)
2. FAS is a lifelong disability (75%)
3. FAS children are characterized by a growth deficiency (70%)
4. FAS is found in all ethnic and socioeconomic-economic groups (89%)
5. FAS children benefit best from early intervention efforts (72%)
6. FAS is viewed as a childhood disability (88%)
7. FAS is becoming more of a problem in my school district (60%)

When requested to present their agreement with various statements regarding the characteristics of FAS or FAE, respondents strongly disagreed or disagreed to the following statements:

1. FAS is a condition that tends to subside with age (87%)

2. FAS children exhibit the same behavioral characteristics (60%)
3. FAS is a lifelong disability (56%)
4. FAS and FAE are two names for the same condition (52%)
5. FAS children have physical features that may change as they reach adolescence (52%)
6. FAS children characteristically have better expressive language

In regards to FAS children exhibiting the same behavioral characteristics and being the leading cause of mental impairment, 50% of the parents strongly agreed or agreed and 50% strongly disagreed or disagreed.

When requested to identify which of the following features are characteristic of FAS, respondents indicated "yes" to the following:

1. motor delays (93)
2. hyperactivity (79%)
3. attention deficit problems (92%)
4. facial physical abnormalities (72%)
5. learning impairments (94%)

CONCLUSIONS

Based on the findings in this study, one can conclude that the sample has a "limited" awareness of FAS and FAE. On the survey questions regarding general facts about FAS/FAE, a majority of the respondents identified the correct answer. For example, the questions concerning the characteristic features of FAS/FAE such as motor delays, hyperactivity, attention deficit problems, facial

physical abnormalities and learning impairments were answered correctly by a majority of the parents. As well, the parents were informed about maternal drinking levels and the time of alcohol consumption which would place the fetus at greatest risk of FAS/FAE. However, a majority of the parents reported that the national incidence was higher than the current literature proposes.

The greatest percentage of parents accurately identified the lower socioeconomic group as having the largest prevalence of FAS children, with the next highest percentage choosing all socioeconomic groups. On the question concerning prevalence among racial/ethnic groups, the majority reported all races as being the same. However, most of the teachers selected the Native America population as the second most prevalent groups for incidence of FAS. Interestingly, the high response to the Native American population may result from the greater press coverage of this population's alcohol problems which have been presented at the national and state levels.

Concerning the question associating FAS to mental impairment, half of the parents did not think this was true. As well, over half of the respondents disagreed that FAS and FAE are basically two names for the same condition. Accordingly, these parents may not realize that many children may be affected by FAS, which affords the syndrome as being the primary contributor to mental impairment.

A majority of the parents reported that they lacked the ability to identify a child with FAS. In addition , a majority of the parents responded that FAS is becoming more of a problem in their school district..

Finally, an important finding of this research report is that an overwhelming majority agreed that FAS children benefit best from early intervention efforts, a finding confirmed by the current literature on FAS. It appears that a majority of the parents would be receptive to a school district obtaining information on the child's prenatal history and information on the parent's alcohol consumption.

RECOMMENDATIONS

Based on the data discovered in this study, the following recommendations are offered:

1. School districts should include questions concerning prenatal alcohol and drug exposure in their health screening survey.
2. School districts should provide parents with information opportunities that familiarize them with the characteristics, strategies, and methods concerning the education of children with FAS/FAE.
3. School districts should provide professional development opportunities for all educators to learn the proper channels for the diagnosis of FAS/FAE, and strategies for providing an appropriate parent involvement in the curriculum and learning environment.

4. Updated resources and information packages should be made available for high school students including speakers, video tapes, and reading materials regarding the risks of
5. Parents and potential parents should have opportunities to attend workshops or classes relating to FAS/FAE offered by other prevention and intervention agencies.
6. Communities should develop district-wide plans for meeting the needs of students with known or suspected effects of FAS.
7. There needs to be coordination of services between health providers, social service agencies, parents, and schools to ensure optimal opportunities for FAS/FAE children.
8. As early childhood teachers are often involved in the initial diagnosis and referral of FAS/FAE children, these educators need to be aware of the characteristics of FAS/FAE and the local procedures for referral and diagnosis.
9. Ongoing research and education continue to be a need through all systems in society to help prevent future afflictions of this unnecessary contributor to mental impairment.

Finally, as the overwhelming predominance of representation in this study was from rural or suburban areas, this study should be extended to teachers in urban areas to determine the likelihood of comparable responses.

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APPENDIX 1
QUESTION RESPONSES BY PERCENT
(n = 297)

1. What type of community best identifies your student population?

a. rural	48
b. suburban	31
c. urban	21

2. What is your level of professional education?

a. less than a baccalaureate degree	64
b. baccalaureate degree	23
c. masters degree	9
d. specialist degree	3
e. doctorate degree	1

3. What is your gender group?

a. male	34
b. female	66

4. What is your racial/ethnic group?

a. Asian-American	2
b. African-American	13
c. European-American	57
d. Hispanic	4
e. Native American	11
f. Other	13

5. When gathering information from a parent on a child's developmental history, does your interview form include questions on prenatal history?

a. yes	94
b. no	6

6. When gathering information form a parent on a child's developmental history, does your interview form include questions on alcohol consumption?

a. yes	88
b. no	12

7. Respond to the following statement:

"I have the ability to identify a student with FAS in my class."

a. strongly agree	3
b. agree	22
c. disagree	53
d. strongly disagree	22

8. What is the prevalence of Fetal Alcohol Syndrome across the various racial/ethnic groups in the US?

a. all races are the same	42
b. most prevalent in Native Americans	23
c. most prevalent in African-Americans	18
d. most prevalent in Hispanic-Americans	7
e. most prevalent in European-Americans	6
f. most prevalent in Asian-Americans	4

9. What is the prevalence of Fetal Alcohol Syndrome across the various socioeconomic-economic groups in the US?

a. most prevalent in lower economic groups	53
b. most prevalent in middle economic groups	7
c. most prevalent in upper economic groups	1
d. equal prevalence in all economic groups	39

11. During which period of fetal development is the risk of Fetal Alcohol Syndrome greatest for a pregnant woman to consume alcohol?

a. first trimester	84
b. second trimester	11
c. third trimester	6

12. A conservative estimate of the prevalence of FAS is approximately:

a. on in 100 births	33
b. one in 500 births	34
c. one in 800 births	16
d. one in 1,000 births	13

13. What is the minimal level of alcohol consumption that would place the fetus in danger of Fetal Alcohol Syndrome?

a. 1 - 2 drinks once or twice a week	38
b. 1 - 2 drinks daily	38
c. 3 - 4 drinks within a week	16
d. 3 - 4 drinks daily	8

SELECT THE RESPONSE THAT BEST REFLECTS YOUR OPINION:

14. FAS children are identifiable

a. strongly agree	15
b. agree	55
c. disagree	25
d. strongly disagree	5

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15. FAS is a condition that tends to subside with age

a. strongly agree	1
b. agree	11
c. disagree	59
d. strongly disagree	28

16. FAS children exhibit the same behavioral characteristics

a. strongly agree	6
b. agree	34
c. disagree	48
d. strongly disagre	12

17. FAS is a lifelong disability

a. strongly agree	26
b. agree	49
c. disagree	21
d. strongly disagree	35

18. FAS is the leading cause of mental impairment

a. strongly agree	7
b. agree	43
c. disagree	40
d. strongly disagree	10

19. FAS children are characterized by a growth deficiency

a. strongly agree	12
b. agree	58
c. disagree	25
d. strongly disagree	5

20. FAS and FAE (fetal alcohol effect) are two names for the same condition

a. strongly agree	5
b. agree	43
c. disagree	42
d. strongly disagree	10

21. FAS children have physical features that may change as they reach adolescence

a. strongly agree	5
b. agree	42
c. disagree	47
d. strongly disagree	5

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22. FAS children characteristically have better expressive language than receptive language

a. strongly agree	6
b. agree	37
c. disagree	50
d. strongly disagree	8

23. FAS is found in all ethnic and socioeconomic groups

a. strongly agree	33
b. agree	54
c. disagree	7
d. strongly disagree	2

24. FAS children benefit best from early intervention efforts

a. strongly agree	19
b. agree	53
c. disagree	26
d. strongly disagree	3

25. FAS is viewed as a childhood disability

a. strongly agree	36
b. agree	52
c. disagree	9
d. strongly disagree	3

26. FAS is becoming more of a problem in my classroom

a. strongly agree	14
b. agree	46
c. disagree	34
d. strongly disagree	7

WHICH OF THE FOLLOWING FEATURES ARE CHARACTERISTIC OF FETAL ALCOHOL SYNDROME?

27. Motor delays

a. yes	93
b. no	7

28. Hyperactivity

a. yes	79
b. no	21

29. Attention deficit problems

a. yes	92
b. no	8

30. Facial physical abnormalities

a. yes	72
b. no	28

31. Learning impairments

a. yes	94
b. no	6